Model SC-200A & SCF-200A
Automatic Battery Charger

Voltage: 6, 12
Amperage: 2, 4

OWNER'S MANUAL

- **READ THE ENTIRE MANUAL BEFORE USING THIS PRODUCT. FAILURE TO DO SO CAN RESULT IN SERIOUS INJURY OR DEATH.**

00-99-000973-0609

IMPORTANT: READ AND SAVE THIS SAFETY AND INSTRUCTION MANUAL.

SAVE THESE INSTRUCTIONS – The SC-200A and SCF-200A offer a wide range of features to accommodate your needs. This manual will show you how to use your charger safely and effectively. Please read, understand and follow these instructions and precautions carefully, as this manual contains important safety and operating instructions. The safety messages used throughout this manual contain a signal word, a message and an icon.

The signal word indicates the level of the hazard in a situation.

⚠DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or bystanders.

⚠WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or bystanders.

⚠CAUTION Indicates a potentially hazardous situation which, if not avoided, could result in moderate or minor injury to the operator or bystanders.

IMPORTANT Indicates a potentially hazardous situation which, if not avoided, could result in damage to the equipment or vehicle or property damage.

Safety messages in this manual contain two different type styles.

- Unnumbered type states the hazard.
- Numbered type states how to avoid the hazard.

The icon gives a graphical description of the potential hazard.

⚠WARNING

Pursuant to California Proposition 65, this product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

1. IMPORTANT SAFETY INSTRUCTIONS

Risk of electric shock or fire.

1.1 Do not expose the charger to rain or snow.

1.2 Use only recommended attachments. Use of an attachment not recommended or sold by Schumacher® Electric Corporation may result in a risk of fire, electric shock or injury to persons or damage to property.

1.3 To reduce the risk of damage to the electric plug or cord, pull by the plug rather than the cord when disconnecting the charger.

1.4 An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and electric shock. If an extension cord must be used, make sure:

- That the pins on the plug of the extension cord are the same size and shape as those of the plug on the charger.
- That the extension cord is properly wired and in good electrical condition.
- That the wire size is large enough for the AC ampere rating of the charger as specified in Section 8.3.

1.5 To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.

1.6 Remove personal metal items such as rings, bracelets, necklaces and watches when working with a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or the like to metal, causing a severe burn.

1.7 Do not operate the charger with a damaged cord or plug; take it to a qualified service person. (Call customer service at: 1-800-621-5485.)

1.8 Do not operate the charger if it has received a sharp blow, been dropped or otherwise damaged in any way; take it to a qualified service person. (Call customer service at: 1-800-621-5485.)

1.9 Do not disassemble the charger; take it to a qualified service person when service or repair is required. Incorrect reassembly may result in a risk of fire or electric shock. (Call customer service at: 1-800-621-5485.)

2. PERSONAL PRECAUTIONS

Risk of explosive gases.

2.1 Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost importance that you follow the instructions each time you use the charger.

2.2 To reduce the risk of a battery explosion, follow these instructions and those published by the battery manufacturer and the manufacturer of any equipment you intend to use in the vicinity of the battery. Review the cautionary markings on these products and on the engine.

2.3 NEVER smoke or allow a spark or flame in the vicinity of a battery or engine.

2.4 Be extra cautious to reduce the risk of dropping a metal tool onto the battery. It might spark or short-circuit the battery or other electrical part that may cause an explosion.

2.5 Use this charger for charging LEAD-ACID batteries only. It is not intended to supply power to a low voltage electrical system other than in a starter-motor application. Do not use this battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

2.6 NEVER charge a frozen battery.

2.7 NEVER overcharge a battery.

3. PREPARING TO CHARGE

Risk of contact with battery acid. Battery acid is a highly corrosive sulfuric acid.

3.1 Consider having someone close enough by to come to your aid when you work near a lead-acid battery.

3.2 Have plenty of fresh water and soap nearby in case battery acid contacts your skin, clothing or eyes.

3.3 Wear complete eye and body protection, including safety goggles and protective clothing. Avoid touching your eyes while working near the battery.

3.4 If battery acid contacts your skin or clothing, immediately wash the area with soap and water. If acid enters your eye, immediately flood the eye with cold running water for at least 10 minutes and get medical attention right away.

3.5 If it is necessary to remove the battery from the vehicle to charge it, always remove the grounded terminal first. Make sure all of the accessories in the vehicle are off to prevent arcing.

3.6 Be sure the area around the battery is well ventilated while the battery is being charged.

3.7 Clean the battery terminals before charging the battery. During cleaning, keep airborne corrosion from coming into contact with your eyes, nose and mouth. Use baking soda and water to neutralize the battery acid and help eliminate airborne corrosion. Do not touch your eyes, nose or mouth.

3.8 Add distilled water to each cell until the battery acid reaches the level specified by the battery manufacturer. Do not overfill. For a battery without removable cell caps, such as valve regulated lead acid batteries (VRLA), carefully follow the manufacturer's recharging instructions.

3.9 Read, understand and follow all instructions for the charger, battery, vehicle and any equipment used near the battery and charger. Study all of the battery manufacturer's specific precautions while charging and recommended rates of charge.

3.10 Determine the voltage of the battery by referring to the vehicle owner's manual and make sure that the output voltage of the charger is the correct voltage.

3.11 Make sure that the charger cable clips make tight connections.

4. CHARGER LOCATION

Risk of explosion and contact with battery acid.

4.1 Locate the charger as far away from the battery as the DC cables permit.

4.2 Never place the charger directly above the battery being charged; gases from the battery will corrode and damage the charger.

4.3 Do not set the battery on top of the charger.

4.4 Never allow battery acid to drip onto the charger when reading the electrolyte specific gravity or filling the battery.

4.5 Do not operate the charger in a closed-in area or restrict the ventilation in any way.

4.6 This charger employs parts, such as switches and circuit breakers, that tend to produce arcs and sparks. If used in a garage, locate this charger 18 inches (45.72 cm) or more above floor level.

5. DC CONNECTION PRECAUTIONS

5.1 Connect and disconnect the DC output clips only after setting all of the charger switches to the "off" position and removing the AC plug from the electrical outlet. Never allow the clips to touch each other.

5.2 Attach the clips to the battery and chassis, as indicated in steps 6.5, 6.6, 7.2, 7.3 and 7.4.

6. FOLLOW THESE STEPS WHEN BATTERY IS INSTALLED IN VEHICLE.

A spark near the battery may cause a battery explosion. To reduce the risk of a spark near the battery:

6.1 Position the AC and DC cables to reduce the risk of damage by the hood, door and moving or hot engine parts. NOTE: If it is necessary to close the hood during the charging process, ensure that the hood does not touch the metal part of the battery clips or cut the insulation of the cables.

6.2 Stay clear of fan blades, belts, pulleys and other parts that can cause injury.

6.3 Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter then the NEGATIVE (NEG, N, -) post.

6.4 Determine which post of the battery is grounded (connected) to the chassis. If the negative post is grounded to the chassis (as in most vehicles), see step 6.5. If the positive post is grounded to the chassis, see step 6.6.

6.5 For a negative-grounded vehicle, connect the POSITIVE (RED) clip from the battery charger to the POSITIVE (POS, P, +) ungrounded post of the battery. Connect the NEGATIVE (BLACK) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

6.6 For a positive-grounded vehicle, connect the NEGATIVE (BLACK) clip from the battery charger to the NEGATIVE (NEG, N, -) ungrounded post of the battery. Connect the POSITIVE (RED) clip to the vehicle chassis or engine block away from the battery. Do not connect the clip to the carburetor, fuel lines or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

6.7 Connect the AC supply cord to the electrical outlet.

6.8 When disconnecting the charger, turn all switches to off, disconnect the AC cord, remove the clip from the vehicle chassis and then remove the clip from the battery terminal.

6.9 See CALCULATING CHARGE TIME for length of charge information.

7. FOLLOW THESE STEPS WHEN BATTERY IS OUTSIDE VEHICLE.

A spark near the battery may cause a battery explosion. To reduce the risk of a spark near the battery:

7.1 Check the polarity of the battery posts. The POSITIVE (POS, P, +) battery post usually has a larger diameter than the NEGATIVE (NEG, N, -) post.

7.2 Attach at least a 24-inch (61 cm) long 6-gauge (AWG) insulated battery cable to the NEGATIVE (NEG, N, -) battery post.

7.3 Connect the POSITIVE (RED) charger clip to the POSITIVE (POS, P, +) post of the battery.

7.4 Position yourself and the free end of the cable you previously attached to the NEGATIVE (NEG, N, -) battery post as far away from the battery as possible – then connect the NEGATIVE (BLACK) charger clip to the free end of the cable.

7.5 Do not face the battery when making the final connection.

7.6 Connect the AC supply cord to the electrical outlet.

7.7 When disconnecting the charger, always do so in the reverse order of the connecting procedure and break the first connection while as far away from the battery as practical.

7.8 A marine (boat) battery must be removed and charged on shore. To charge it onboard requires equipment specially designed for marine use.

8. BATTERY CHARGING – AC CONNECTIONS

Risk of electric shock or fire.

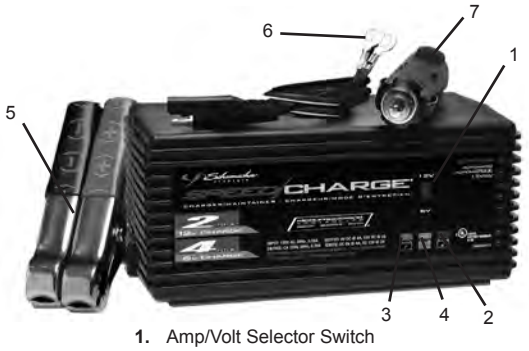
8.1 This battery charger is for use on a nominal 120-volt circuit. The charger must be grounded to reduce the risk of electric shock. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances. The plug pins must fit the receptacle (outlet). Do not use with an ungrounded system.

8.2 Never alter AC cord or plug provided – if it does not fit the outlet, have proper grounded outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock or electrocution. **NOTE**: The use of an adapter plug is not recommended.

8.3 Recommended minimum AWG size for extension cord:

- 100 feet long or less - use an 18 gauge extension cord.
- Over 100 feet long - use a 16 gauge extension cord.

9. FEATURES



1. Amp/Volt Selector Switch
2. CHECK BATTERY ☑ (red) LED
3. CHARGING (yellow) LED
4. CHARGED (green) LED
5. Battery Clip Cable Assembly
6. Ring Terminal Cable Assembly
7. 12V Plug Cable Assembly

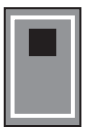
10. ASSEMBLY INSTRUCTIONS

No assembly required

11. CONTROL PANEL

The charger does not have an ON/OFF switch. The On and Off commands are controlled by plugging the charger into a 120V AC electrical wall outlet only after the battery connections have been made and the Amp/Volt selector switch has been set.

11.1 Amp/Volt Selector Switch



2 Amp, 12 Volt

4 Amp, 6 Volt

11.2 LED Display

CHECK BATTERY ☑ **(red) LED lit:** Indicates the battery is not properly connected to the charger.

CHECK BATTERY ☑ **(red) LED blinking:** Indicates the charger is in abort mode.

CHARGING **(yellow) LED lit:** Indicates the charger is charging the battery.

CHARGED **(green) LED lit:** Indicates the battery is fully charged and the charger is in maintain mode**.**

NOTE: See the Operating Instructions section for a complete description of the charger modes.

12. OPERATING INSTRUCTIONS

Charging

1. Ensure that all of the charger components are in place and in good working condition, including the plastic boots on the battery clips.
2. Connect the battery following the connection instructions described in Using the Quick-Disconnect Cable Connectors section.
3. Set the Amp/Volt Selector Switch to the proper setting for the battery being charged.
4. Connect the AC power following the precautions listed in Section 8.
5. If you've connected everything correctly, the CHARGING (yellow) LED should be lit indicating that the charger is charging. If the CHARGING (yellow) LED does not light or if the CHECK BATTERY ☑ **(**red) LED is lit, check the connections or have the battery checked/ replaced.

NOTE: This charger is equipped with an auto-start feature. It will not supply current to the battery clips until a battery is properly connected. Unlike traditional chargers, the clips will not spark if touched together.

USING THE QUICK-DISCONNECT CABLE CONNECTORS
Connect any of the three output cable assemblies to the charger in seconds. Make sure to place the charger on a dry, non-flammable surface like metal or concrete.

NOTE: Never connect the clamp and ring terminal connectors together for use in other applications, such as external battery or other power source charging, or to extend the output cable length, as reverse polarity and/or overcharge conditions will occur.

50 amp Battery Clips

1. Connect the end of the 50 amp battery clips cable Quick-Connect to the charger.
2. Follow the steps in sections 6 and 7 to connect the output clips to the battery.
3. After a good electrical connection is made to the battery, plug the power cord into a 3-prong grounded 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface like metal or concrete.

Permanent Ring Connectors
The ring connectors permanently attach to the battery providing easy access to quickly charge your battery. This application is appropriate for motorcycles, lawn tractors, ATVs and snowmobiles.

1. To permanently attach to a battery, loosen and remove each nut from the bolt at the battery terminal.
2. Connect the red POSITIVE ring connector ring to the POSITIVE battery terminal.
3. Connect the black NEGATIVE connector ring to the NEGATIVE battery terminal.
4. Replace and tighten the nuts to secure.
5. Connect the end of the ring terminal cable Quick-Connect to the charger. Take care to keep the wires and plug away from metal and moving parts.
6. Plug the charger power cord into a 3-prong grounded 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface like metal or concrete.

12V ACCESSORY PLUG
Charge or maintain your battery without lifting the hood.

1. Connect the end of the 12V Accessory Plug Cable Quick-Connect to the charger.
2. Insert the 12V accessory plug into the 12V accessory outlet.
3. Route the power cord from charger through the vehicle's open window.
4. Plug the charger power cord into a 3-prong grounded 120V AC electrical wall outlet. Make sure to place the charger on a dry, non-flammable surface like metal or concrete.

Battery Connection Indicator
If the charger does not detect a properly connected battery, the CHECK BATTERY ☑ **(**red) LED will light continuously until such a battery is detected. Charging will not begin while the CHECK BATTERY ☑ **(**red) LED is on..

Completion of Charge
Charge completion is indicated by the CHARGED (green) LED. When lit, the charger has stopped charging and switched to the Maintain Mode of operation.

Maintain Mode (Float-Mode Monitoring)
When the CHARGED (green) LED is lit, the charger has started Maintain Mode. In this mode, the charger keeps the battery fully charged by delivering a small current when necessary. If the battery voltage drops below a preset level, the charger will go back into Charge Mode until the battery voltage returns to the full charge level, at which point the charger will return to Maintain Mode. The voltage is maintained at a level determined by the 6 volt or 12 volt battery type selected.

NOTE: The charger automatically switches between Charge Mode and Maintain Mode as necessary. The CHARGED (green) LED will cycle on when the battery is at full charge and off when the voltage drops below a preset level and the charger goes into Charge Mode. This cycle will continue, and the CHARGED (green) LED will stay on for longer periods of time as the battery becomes more fully charged.

Desulfation Mode
If the battery is left discharged for an extended period of time, it could become sulfated and not accept a normal charge. If the charger detects a sulfated battery, the charger will switch to a special mode of operation designed for such batteries. If successful, normal charging will resume after the battery is desulfated. Desulfation could take up to 8 hours. If desulfation fails, charging will abort and the CHECK BATTERY ☑ **(**red) LED will blink.

Aborted Charge
If charging can not be completed normally, charging will abort. When charging aborts, the charger's output is shut off, and the CHECK BATTERY ☑ **(**red) LED will blink. To reset after an aborted charge, either disconnect the battery or unplug the charger.

13. CALCULATING CHARGE TIMES

This charger adjusts the charging time in order to charge the battery completely, efficiently and safely.

This battery charger has a rated output of 2 and 4 amperes. This output will vary with the age and condition of the battery being charged. If the battery has only been slightly discharged, it can be charged in less than a few hours. The same battery will take longer to charge if it is very weak.

13.1 Charging Times

	Battery Condition	
2 Amp, 12 Volt Battery	**50% Discharged**	**100% Discharged**
Ampere Hour Battery Capacity	Approximate Average Charge Time in Hours	
10	3.2	6.2
12	4.0	7.5
20	6.4	12.4

	Battery Condition	
4 Amp, 6 Volt Battery	**50% Discharged**	**100% Discharged**
Ampere Hour Battery Capacity	Approximate Average Charge Time in Hours	
10	1.6	3.2
12	2.0	4.0
20	3.2	6.4

14. MAINTENANCE INSTRUCTIONS

14.1 Before performing maintenance, unplug and disconnect the battery charger (see Sections 6, 7 and 8).

14.2 After use, unplug the charger and use a dry cloth to wipe all battery corrosion and other dirt or oil from the terminals, cords, and the charger case.

14.3 Ensure that all of the charger components are in place, securely attached and in good working condition, including the plastic boots on the battery clips.

14.4 Servicing does not require opening the unit, as there are no user-serviceable parts.

15. STORAGE INSTRUCTIONS

15.1 Store the charger unplugged, in an upright position. The cord will still conduct electricity until it is unplugged from the outlet.

15.2 Store inside, in a cool, dry place (unless you're using an on-board Marine Charger).

16. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	REASON/SOLUTION
Charger will not turn on when properly connected.	AC outlet is dead.	Check for an open fuse or circuit breaker supplying the AC outlet.
	Poor electrical connection.	Check the power cord and extension cord for as loose fitting plug.
	Clips are not making a good connection to the battery.	Check for poor connection to battery and frame. Make sure connection points are clean. Rock clips back and forth for a better connection.
	Battery is defective.	Have the battery checked.
	Reverse connections at battery.	Unplug the charger and correct the lead connections.
Charger makes a loud buzz or hum.	Transformer laminations vibrate (buzz).	No problem, this is a normal condition.
	Shorted Diode Assembly or Output Rectifier Assembly (hum).	Have charger checked by a qualified technician.
CHECK BATTERY (red) LED is lit.	Battery is not properly connected to the charger.	Make sure the connections from the battery connector cable to the battery and to the charger are tight. Check for a poor connection to the battery and the frame. Make sure the connections points are clean. Rock the clips back and forth for a better connection.
	Reverse connections at battery.	Unplug the charger and correct the lead connections.
CHECK BATTERY (red) LED is blinking.	Charger is in abort mode.	See "Aborted Charge" in the OPERATING INSTRUCTIONS Section.

17. BEFORE RETURNING FOR REPAIRS

17.1 When a charging problem arises, make certain that the battery is capable of accepting a normal charge. Use a good battery to double check all connections, the AC outlet for a full 120-volts, the charger clips for correct polarity and the quality of the connections from the cables to the clips and from the clips to the battery system. The clips must be clean.

17.2 When a battery is very cold, partially charged or sulfated, it will not draw the full rated amperes from the charger. It is both dangerous and damaging to a battery to force higher amperage into it than it can effectively use in recharging.

17.3 When an UNKNOWN OPERATING PROBLEM arises, please read the complete manual and call the customer service number for information that will usually eliminate the need for return.

If the above solutions do not eliminate the problem or for information about troubleshooting or replacement parts, call toll-free from anywhere in the U.S.A.
1-800-621-5485
7:00 am to 5:00 pm Central Time Monday thru Friday

18. REPLACEMENT PARTS

Battery Clip Cable Assembly----------38-99-001235

Ring Terminal Cable Assembly----------38-99-001233

12V Plug Cable Assembly----------38-99-001401

19. LIMITED WARRANTY

SCHUMACHER ELECTRIC CORPORATION, 801 BUSINESS CENTER DRIVE, MOUNT PROSPECT, IL 60056-2179, MAKES THIS LIMITED WARRANTY TO THE ORIGINAL RETAIL PURCHASER OF THIS PRODUCT. THIS LIMITED WARRANTY IS NOT TRANSFERABLE OR ASSIGNABLE.

Schumacher Electric Corporation (the "Manufacturer") warrants this battery charger for 2 years from the date of purchase at retail against defective material or workmanship that may occur under normal use and care.

If your unit is not free from defective material or workmanship, Manufacturer's obligation under this warranty is solely to repair or replace your product with a new or reconditioned unit at the option of the Manufacturer. It is the obligation of the purchaser to forward the unit, along with mailing charges prepaid to the Manufacturer or its authorized representatives in order for repair or replacement to occur.

Manufacturer does not provide any warranty for any accessories used with this product that are not manufactured by Schumacher Electric Corporation and approved for use with this product. This Limited Warranty is void if the product is misused, subjected to careless handling, repaired, or modified by anyone other than Manufacturer or if this unit is resold through an unauthorized retailer.

Manufacturer makes no other warranties, including, but not limited to, express, implied or statutory warranties, including without limitation, any implied warranty of merchantability or implied warranty of fitness for a particular purpose. Further, Manufacturer shall not be liable for any incidental, special or consequential damage claims incurred by purchasers, users or others associated with this product, including, but not limited to, lost profits, revenues, anticipated sales, business opportunities, goodwill, business interruption and any other injury or damage. Any and all such warranties, other than the limited warranty included herein, are hereby expressly disclaimed and excluded. Some states do not allow the exclusion or limitation of incidental or consequential damages or length of implied warranty, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and it is possible you may have other rights which vary from this warranty.

THIS LIMITED WARRANTY IS THE ONLY EXPRESS LIMITED WARRANTY AND THE MANUFACTURER NEITHER ASSUMES OR AUTHORIZES ANYONE TO ASSUME OR MAKE ANY OTHER OBLIGATION TOWARDS THE PRODUCT OTHER THAN THIS WARRANTY.

Schumacher Electric Corporation Customer Service
1-800-621-5485
Monday – Friday 7:00 a.m. to 5:00 p.m. CST

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Modelo SC-200A & SCF-200A
Cargador de Baterías Automático

Voltios: 12

Amperios: 2, 4

MANUAL DEL USUARIO

- **LEA EL MANUAL COMPLETO ANTES DE UTILIZAR ESTE PRODUCTO. CUALQUIER FALLA PODRÍA RESULTAR EN SERIAS LESIONES O PODRÍA SER MORTAL.**

IMPORTANTE: LEA Y GUARDE ESTE MANUAL DE INSTRUCCIONES Y SEGURIDAD.

GUARDE ESTAS INSTRUCCIONES: los SC-200A and SCF-200A ofrecen una amplia gama de características para satisfacer sus necesidades. Este manual le mostrará cómo utilizar su cargador en forma segura y efectiva. Por favor, lea, comprenda y siga estas instrucciones y precauciones cuidadosamente, ya que este manual contiene instrucciones operativas y de seguridad de importancia. Los mensajes de seguridad representados en este manual contienen palabras guía, un mensaje y una figura.

La palabra guía indica el nivel de peligro en determinada situación.

⚠ PELIGRO Indica una inminente situación de riesgo que, si no se evita, resultaría mortal o de serios perjuicios al operador o personas alrededor.

⚠ ADVERTENCIA Indica una situación potencialmente riesgoso que, si no se evita, podría resultar o de serios perjuicios al operador o personas alrededor.

⚠ ATENCIÓN Indica una situación potencialmente peligrosa que, de no evitarse, podría resultar en menores o serio daños al usuario y terceras personas.

IMPORTANTE Indica una situación potencialmente peligrosa que, de no evitarse, podría causar daño al equipo, al vehículo y propiedades alrededor.

Los mensajes estipulados en este manual se describen dos tipos de estilo.

- Los que aparecen sin número indican el riesgo.
- Aquellos que aparecen numerados, indican cómo evitar los riesgos.

La figura muestra una descripción gráfica del potencial de riesgo.